WHAT IS CLAIMED IS:

1. An optical lens, comprising:

a substrate made of an optical material; and

a convex element formed integrally with said substrate and having a convex curved face so as to have a function as an optical lens;

said curved face of said convex element having a first curvature on a first cross section including an axis in a focus direction of said optical lens and a second curvature on a second cross section perpendicular to said first cross section and intersecting with said first cross section along the axis in the focus direction, the second curvature being different from the first curvature.

2. An optical lens according to claim 1, wherein a focal length of said optical lens on said first cross section and a focal length of said optical lens on said second cross section are different from each other.

3. An optical lens according to claim 1, wherein the shapes of said convex element on said first and second cross sections are symmetrical with respect to the axis in the focus direction.

4. An optical lens according to claim 1, wherein the shapes of said convex element on said first and

second cross sections are shapes of arcs substantially of ellipses.

5. An optical lens according to claim 1, wherein said substrate has a flat face on which said convex element is formed.

6. An optical lens according to claim 1, wherein a groove is formed along a boundary between said substrate and said convex element.

7. An optical lens according to claim 6, wherein said groove has a substantially elliptical shape.

8. An optical lens according to claim 6, wherein said groove has a substantially rectangular shape.

9. A method of producing an optical lens, comprising the steps of:

forming, on a substrate made of an optical material, a mask layer corresponding to a shape of an optical lens having a pattern whose width in a first direction is different from a width thereof in a second direction perpendicular to the first direction;

deforming the mask layer by heat treatment so that a surface area of the mask layer may be reduced; and

removing the mask layer and the substrate simultaneously to transfer the shape of the mask layer to the substrate to form the shape of the optical lens.

10. A method of producing an optical lens according to claim 9, wherein the mask layer is formed by performing a light-exposure and development process for a photosensitive material film to pattern the photosensitive material film.

11. A method of producing an optical lens according to claim 10, wherein, in the step of deforming the mask layer by heat treatment so that a surface area of the mask layer may be reduced, the heat treatment is performed at a temperature higher than a glass transition point of the photosensitive material film.

12. A method of producing an optical lens according to claim 10, wherein, in the step of deforming the mask layer by heat treatment so that a surface area of the mask layer may be reduced, the heat treatment is performed at a temperature lower than a carbonization temperature of the photosensitive material film.

13. A method of producing an optical lens according to claim 9, wherein, in the step of deforming the mask layer by heat treatment so that a surface area of the mask layer may be reduced, the heat treatment is performed at a temperature higher than a room temperature.

14. A method of producing an optical lens according to claim 9, wherein, in the step of removing

the mask layer and the substrate simultaneously, a dry etching process is performed using the mask layer as a mask to transfer the shape of the mask layer to the substrate to form the shape of the optical lens.

15. A method of producing an optical lens according to claim 14, wherein the dry etching process is performed in a condition that selection ratios for the substrate and the mask layer are substantially equal to each other.

16. A method of producing an optical lens array, comprising the steps of:

forming, on a substrate made of an optical material, a plurality of mask layer portions corresponding to shapes of a plurality of optical lenses each having a pattern whose width in a first direction is different from a width thereof in a second direction perpendicular to the first direction;

deforming the mask layer portions by heat treatment so that a surface area of each of the mask layer portions may be reduced; and

removing the mask layer portions and the substrate simultaneously to transfer the shapes of the mask layer portions to the substrate to form the shapes of the optical lenses.

17. A focus error signal production method for irradiating light upon an optical recording medium to obtain focus information of returning light from the optical recording medium, comprising the step of:

obtaining focus information of the returning light from the optical recording medium using an optical lens which includes a substrate made of an optical material and a convex element formed integrally with the substrate and having a convex curved face so as to have a function as an optical lens, the convex element being configured such that a focal length on a first cross section including an axis in a focus direction of the optical lens and a focal length on a second cross section perpendicular to the first cross section and intersecting with the first cross section along the axis in the focus direction are different from each other.

18. A focus error signal production method according to claim 17, wherein the shapes of the convex element on the first and second cross sections of the optical lens are symmetrical with respect to the axis in the focus direction.

19. A focus error signal production method according to claim 17, wherein the shapes of the convex element on the first and second cross sections of the

optical lens are shapes of arcs substantially of ellipses.

20. A focus error signal production method according to claim 17, wherein the substrate of the optical lens has a flat face on which the convex element is formed.

21. A focus error signal production method according to claim 17, wherein a groove is formed along a boundary between the substrate and the convex element of the optical lens.

22. A focus error signal production method according to claim 21, wherein the groove of the optical lens has a substantially elliptical shape.

23. A focus error signal production method according to claim 21, wherein the groove of the optical lens has a substantially rectangular shape.

24. An optical pickup apparatus which irradiates light upon an optical recording medium and receives reflected light from the optical recording medium, comprising:

a light emitting element for emitting light;

a light receiving element for receiving the light emitted from said light emitting element; and

an optical member for introducing the light emitted from said light emitting element so as to be irradiated

upon the optical recording medium and introducing the reflected light from the optical recording medium to said light receiving element;

said optical member including an optical lens which includes a substrate made of an optical material and a convex element formed integrally with said substrate and having a convex curved face so as to have a function as an optical lens, said convex element being configured such that a focal length on a first cross section including an axis in a focus direction of said optical lens and a focal length on a second cross section perpendicular to said first cross section and intersecting with said first cross section along the axis in the focus direction are different from each other.

25. An optical pickup apparatus according to claim 24, wherein the shapes of said convex element on said first and second cross sections of said optical lens are symmetrical with respect to the axis in the focus direction.

26. An optical pickup apparatus according to claim 24, wherein the shapes of said convex element on said first and second cross sections of said optical lens are shapes of arcs substantially of ellipses.

27. An optical pickup apparatus according to claim

24, wherein said substrate of said optical lens has a flat face on which said convex element is formed.

28. An optical pickup apparatus according to claim 24, wherein a groove is formed along a boundary between said substrate and said convex element of said optical lens.

29. An optical pickup apparatus according to claim 28, wherein said groove of said optical lens has a substantially elliptical shape.

30. An optical pickup apparatus according to claim 28, wherein said groove of said optical lens has a substantially rectangular shape.